

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Matt Murray

Confirmation No.: 7610

Serial No.: 10/743,670

Group Art Unit: 2618

Filed: December 22, 2003

Examiner: Pan, Yuwen

For: **MULTI-MODE AUDIO PROCESSORS AND METHODS OF OPERATING  
THE SAME**

Date: October 15, 2007

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §41.37**

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed July 17, 2007 and the "Notice of Panel Decision from Pre-Appeal Brief Review" mailed September 13, 2007.

**Real Party In Interest**

The real party in interest is assignee Sony Ericsson Mobile Communications AB, Lund, Sweden.

**Related Appeals and Interferences**

Appellant is not aware of any appeals or interferences that would be affected by the present appeal.

**Status of Claims**

Appellant appeals the final rejection of Claims 6 and 8-17 as set forth in the Final Office Action of March 7, 2007 (hereinafter "Final Action"). Claims 6 and 8-17 stand rejected. Claim 7 has been canceled and Claims 1-5 and 18-23 are withdrawn from consideration. The claims involved in the appeal as included in Appellant's response to the Office Action of February 28, 2007 are attached hereto as Appendix A.

### **Status of Amendments**

All Amendments filed in the present Application have been entered. No Amendments have been made After Final. The attached Appendix A presents the pending claims and the corresponding status of each of the pending claims.

### **Summary of Claimed Subject Matter**

Independent Claim 6 is directed to a mobile terminal including a housing and a microphone positioned in the housing. *See* Specification, page 3, lines 5-6; Figure 1, elements 101 and 190. A speaker is also positioned in the housing remote from the microphone. *See* Specification, page 3, lines 6-7; Figure 1, element 180. A multi-mode audio processor circuit is provided and is configured to apply noise cancellation to first and second microphone inputs thereof. The first microphone input is coupled to the microphone and the second microphone input is coupled to the speaker. *See* Specification, page 3, lines 7-10; Figure 1, element 157. The speaker includes a transducer and the multi-mode audio processor circuit is configured to transmit sound from the transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the microphone and the transducer in a second mode of operation. *See* Specification, page 2, lines 17-20; Figure 1, element 157.

Dependent Claim 8 is further directed to a multi-mode audio processor circuit that is configured to generate an audio signal from sound energy received by the microphone in the first mode of operation. *See* Specification, page 2, lines 21-23; Figure 1, element 157. Dependent Claim 9 is further directed to the multi-mode audio processor circuit that is further configured to combine first and second audio signals produced from sound energy received by the microphone and the transducer, respectively, in the second mode to generate a noise-attenuated audio signal. *See* Specification, page 2, lines 23-27; Figure 1, element 157.

Independent Claim 12 is directed to a mobile terminal including a multi-mode audio processor circuit operatively associated with a transducer. *See* Specification, page 3, lines 12-13; Figure 1, element 157. The multi-mode audio processor circuit is configured to operate the transducer as a speaker during a first mode of operation and a microphone during a second mode of operation. *See* Specification, page 3, lines 13-15.

Dependent Claim 13 further provides a transducer including a first transducer. The mobile terminal further includes a housing, where the first transducer is positioned in the

housing. *See* Specification, page 3, lines 5-6; Figure 1, elements 101 and 190. A second transducer is positioned in the housing and spaced apart from the first transducer. *See* Specification, page 3, lines 6-7; Figure 1, element 180. The multi-mode audio processor circuit is further configured to transmit sound from the first transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the first and second transducers in a second mode of operation. *See* Specification, page 2, lines 17-20; Figure 1, element 157.

Dependent Claim 14 is further directed to a multi-mode audio processor circuit that is configured to generate an audio signal from sound energy received by the second transducer in the first mode of operation. *See* Specification, page 2, lines 21-23; Figure 1, element 157. Dependent Claim 15 is further directed to the multi-mode audio processor circuit that is further configured to combine first and second audio signals produced from sound energy received by the first and second transducers, respectively, in the second mode to generate a noise-attenuated audio signal. *See* Specification, page 2, lines 23-27; Figure 1, element 157.

#### **Grounds of Rejection to be Reviewed on Appeal**

1. Claims 6-9 and 12-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent Application Publication No. 2004/0063456 to Griffin (hereinafter "Griffin"). *See* Final Action, page 3.
2. Claims 10 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over Griffin in view of United States Patent No. 5,046,103 to Warnaka (hereinafter "Warnaka"). *See* Final Action, page 4.
3. Claims 11 and 17 stand rejected under 35 U.S.C. §103 as being unpatentable over Griffin and Warnaka in further view of United States Patent No. 5,251,262 to Suzuki (hereinafter "Suzuki"). *See* Final Action, page 5.

#### **Argument**

##### **I. Introduction to 35 U.S.C. §102/§103 Analysis**

Under 35 U.S.C. § 102, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art

reference." M.P.E.P. § 2131 (quoting *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Sys. Inc.*, 57 U.S.P.Q.2d 1057, 1061 (Fed. Cir. 2000). "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" M.P.E.P. § 2112 (citations omitted).

A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. See *Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991). In particular, the Court of Appeals for the Federal Circuit held that a finding of anticipation requires absolute identity for each and every element set forth in the claimed invention. See *Trintec Indus. Inc. v. Top-U.S.A. Corp.*, 63 U.S.P.Q.2d 1597 (Fed. Cir. 2002). Additionally, the cited prior art reference must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention.

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v. Teleflex Inc.*, 550 U. S. 1, 15 (2007). A corollary principle is that, when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be unobvious. *Id.* at 12. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id.* at 13. A Court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 13. When it is necessary for a Court to look at interrelated teachings of multiple patents, the Court must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. *Id.* at 14.

Appellant respectfully submits that the pending independent claims are patentable over the cited references for at least the reason that the cited references do not disclose or suggest many of the recitations of the claims. The patentability of the pending claims is discussed in detail hereinafter.

**A. The Claims are Patentable over Griffin**

**1. Independent Claim 6 is Patentable over Griffin**

As discussed above, Claims 6-9 and 12-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Griffin. *See* Final Action, page 3. Appellant respectfully submits that many of the recitations of these claims are neither disclosed nor suggested by the cited references. For example, independent Claim 6 recites:

A mobile terminal comprising:  
a housing;  
a microphone positioned in the housing;  
a speaker positioned in the housing remote from the microphone; and  
a multi-mode audio processor circuit configured to apply noise cancellation to first and second microphone inputs thereof, the first microphone input being coupled to the microphone and the second microphone input being coupled to the speaker,

**wherein the speaker comprises a transducer and wherein the multi-mode audio processor circuit is configured to transmit sound from the transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the microphone and the transducer in a second mode of operation.**

Appellant submits that at least the highlighted recitations of independent Claim 6 are neither disclosed nor suggested by Griffin for at least the reasons discussed herein.

In particular, the Final Action points to a microphone 14d and a speaker 14a of Figure 4 of Griffin as providing the teachings of the microphone and speaker as recited in independent Claim 6. *See* Final Action, page 3. Appellant respectfully disagrees. In particular, Griffin discusses first and second communication modules configured to communicate so as to allow, for example, hands-free operation of one of the communication modules. *See* Griffin, Abstract. Figure 4 of Griffin illustrates a communication module configured to be received in a user's ear for hands-free operation of a second communication module. *See* Griffin, paragraph 32. As discussed in Griffin, the microphone 14d may pick up more than the user's voice, thus, some embodiments of Griffin may provide a noise cancellation circuit to filter out background noise, *i.e.*, noise other than the user's voice. *See* Griffin, paragraph 33. Devices for and methods of noise cancellation are not new.

In stark contrast, Claim 6 recites:

wherein the speaker comprises a transducer and wherein the multi-mode audio processor circuit is configured to transmit sound from the transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the microphone and the transducer in a second mode of operation.

In other words, the speaker (transducer) operates in two modes, a first mode where the transducer is configured to transmit noise and a second mode where the transducer is configured to operate in combination with the microphone to generate noise. Thus, as discussed in the specification of the present application:

...portable electronic devices including multi-mode audio processors according to embodiments of the present invention **may apply two-microphone noise cancellation or other audio signal processing algorithms without providing two physical microphones in the housing of the portable electronic device.**

*See* Specification, page 4, lines 29-33 (emphasis added). Nothing in the cited portion of Griffin discloses or suggests the recitations of Claim 6 as set out above for at least these reasons. Griffin merely discusses a hands-free system having a microphone and a speaker and may have noise cancellation capability to filter out background noise inadvertently

received by the microphone. Therefore, Appellant respectfully submits that Claim 6 and the claims that depend therefrom are patentable over Griffin for at least the reasons discussed herein.

Responsive to Appellant's arguments, the Final Action states:

The examiner believes that applicant tries to claim a mobile terminal has a speaker with a microphone for picking up noise and another microphone for picking up the voice energy from a user. During the first mode in which a speaker operation mode, the microphone for picking up noise is turned off (see page 13, lines 15-20). Thus, the microphone for picking up noise is not used during the first mode. During the second mode in which is mic. mode wherein both microphones are operation for optimizing the receiving of human voice. From examiner point of view, it is basic a process of noise cancellation for the mic. mode. So the Griffin reference clearly teaches a wireless device comprising a speaker (item 14a) with a noise microphone (item 48) and another microphone (14d) for human voice. Based on the structure, it is clear that the speaker is utilized for alerting user for incoming all or voice communication from another end as the first mode. The association of microphone and noise microphone are clearly taught in paragraph 33 in which to provide a higher quality speech signal from the user end. In addition, since the applicant does not claim "without two microphones" (see applicant's remark, page 8), the argument regarding to this feature is moot. Therefore, based on the foregoing reasoning, the previous rejection is maintained.

See Final Action, page 2 (emphasis added). Appellant respectfully disagrees with the Examiner's point of view as set out above.

In particular, the Final Action points to page 13, lines 15-20 of the specification of the present application to support the statements in the Final Action. The entire paragraph of the specification from which this citation is taken states:

If voice activity is detected (block 540) above a certain threshold at the microphone, the speaker/microphone may be configured to operate as a microphone (block 550). Sound energy may be received at the microphone and the speaker/microphone in the second mode of operation. It will be understood that the microphone and speaker/microphone (first and second transducers) may receive the sound energy created by, for example, a human voice, at different times and with different amplitudes, as one of the transducers may be positioned closer to the source of the sound energy, for example, a user's mouth. A multi-mode audio processor circuit may receive the sound energy from the first and second transducers at first and second microphone inputs, respectively, and combine first and second audio signals produced from the sound energy received by the first and second transducers, respectively, in the second mode of operation (block 560). A single noise-attenuated audio signal may be generated based on the combined first and second audio signals (block 570). On the other hand, when voice activity is not detected at the microphone (block 540), the speaker/microphone may operate as a speaker in the first mode of operation (block 545) and the path of the microphone may be disabled until voice activity is detected.

See Specification, page 13, lines 5-21 (emphasis added). In other words, the speaker/microphone **is a single physical device** that operates as a microphone in one mode of operation and as a speaker in another mode.

Thus, referring to the recitations of Claim 6, set out above, the transducer operates as speaker in the first mode of operation and microphone in the second mode of operation. Providing a single device that provides two operations may allow the device in which the speaker/microphone is included to be made smaller according to some embodiments of the present invention.

In stark contrast, the Final Action points to **two devices** as providing the teachings of the single speaker/microphone (transducer) as recited in Claim 6 of the present application. In particular, the Final Action points to a microphone 14d and a speaker 14a of Figure 4 of Griffin as providing the teachings of the microphone/speaker device as recited in independent Claim 6. See Final Action, page 2. The provision of a microphone 14d and a speaker 14a in Griffin used in combination with a background noise microphone 48 of Griffin, does not provide a device with dual modality (speaker and microphone) as recited in independent Claim 6 of the present application. Accordingly, Appellant respectfully submits that independent Claim 6 and the claims that depend therefrom are patentable over Griffin for at least these additional reasons.

Finally, the Advisory Action states that because the microphone 14d and the speaker 14d of Griffin are in "a single physical house/device", Griffin teaches "a device with dual modality as recited in independent claims 6 and 12 of the present application." See Advisory Action, Continuation Sheet. Appellant respectfully submits that the provision of a microphone and a speaker in a single housing does not teach a device with dual modality (speaker and microphone) as recited in independent Claims 6 and 12 of the present application. For at least the reasons discussed herein, Appellant respectfully requests reversal of the rejections with respect to Claim 6 and the claims that depend therefrom.

## **2. Independent Claim 12 is Patentable over Griffin**

Furthermore, independent Claim 12 recites:

A mobile terminal comprising a multi-mode audio processor circuit operatively associated with a transducer, **the multi-mode audio processor circuit being configured to operate the transducer as a speaker during a first mode of operation and a microphone during a second mode of operation.**



Appellant respectfully submits that at least the highlighted recitations of Claim 12 are neither disclosed nor suggested by Griffin for at least the reasons discussed herein. The Final Action points to the same portions of Griffin cited as teaching the recitations of Claim 6 as teaching the recitations of Claim 12. *See* Final Action, page 4. Thus, Appellant submits that independent Claim 12 is patentable over Griffin for at least the reasons discussed above with respect to Claim 6. Furthermore, as discussed above, Griffin discusses a hands-free system having a microphone and a speaker and may have noise cancellation capability to filter out background noise inadvertently received by the microphone. Nothing in Griffin discloses or suggests a transducer that operates as both a speaker and a microphone as recited in independent Claim 12. Accordingly, Appellant submits that independent Claim 12 and the claims that depend therefrom are patentable over Griffin for at least the reasons discussed herein. Appellant respectfully requests withdrawal of the rejections with respect to Claim 12 and the claims that depend therefrom for at least the reason discussed herein.

**3. Dependent Claims 8 and 14 are separately Patentable over Griffin**

Dependent Claim 8 recites " wherein the multi-mode audio processor circuit is configured to generate an audio signal from sound energy received by the microphone in the first mode of operation." Dependent Claim 14 contains similar recitations. The Final Action states:

Griffin further teaches that the processor (196) is configured to generate an audio signal from sound energy received by the microphone (14a) in the first mode of operation. (see paragraph 33).

*See* Final Action, page 4. Element 14a of Griffin is a speaker. The speaker does not have first and second modes during which it is a speaker and a microphone, respectively. *See* Griffin, paragraph 33. Furthermore, the only thing Griffin states about processor 196 is:

...The second communication module 162 preferably includes a microphone and a speaker 190, a short-range wireless transceiver 192, an antenna 194, a rechargeable battery 188, **and possibly an integral processor 196...**

*See* Griffin, paragraph 56. Accordingly, nothing in Griffin discloses or suggests a multi-mode audio processor circuit that is configured to generate an audio signal from sound energy

received by the microphone in the first mode of operation as recited in dependent Claims 8 and 14 for at least the reasons discussed herein. Thus, Appellant respectfully requests reversal of the rejections with respect to Claims 8 and 14 for at least these additional reasons.

**4. Dependent Claim 13 is Separately Patentable over Griffin**

Dependent Claim 13 recites:

The mobile terminal of Claim 12 wherein the transducer comprises a first transducer, the mobile terminal further comprising:  
a housing, the first transducer being positioned in the housing; and  
a second transducer positioned in the housing and spaced apart from the first transducers, wherein the multi-mode audio processor circuit is further configured to transmit sound from the first transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the first and second transducers in a second mode of operation.

Thus, Appellant respectfully submits that dependent Claim 13 is patentable over Griffin for at least the reasons discussed above with respect to Claim 6. Accordingly, Appellant respectfully requests reversal of the rejections with respect to dependent Claim 13 for at least these additional reasons.

**5. Dependent Claims 9 and 15 are Separately Patentable over Griffin**

Dependent Claim 9 recites:

The mobile terminal of Claim 6 wherein the multi-mode audio processor circuit is further configured to combine first and second audio signals produced from sound energy received by the microphone and the transducer, respectively, in the second mode to generate a noise-attenuated audio signal.

Dependent Claim 15 contains similar recitations. The Final Action again cites to paragraph 33 of Griffin as teaching the recitations of Claims 9 and 15. Paragraph 33 of Griffin discusses a hands-free system having a microphone 14d and a speaker 14a. Nothing in Griffin discusses a single element having different functionalities in first and second modes. Claims 9 and 15 detail the second mode of operation. Accordingly, Appellant respectfully submits that Claims 9 and 15 are separately patentable over Griffin and, therefore, request that the rejections with respect to these claims be reversed for at least the reasons discussed herein.

**B. Claims 10 and 16 are Patentable over Griffin and Warnaka**

Claims 10 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over Griffin in view of Warnaka. *See* Final Action, page 4. As discussed above, the dependent claims are patentable at least per the patentability of the independent base claims from which they depend. Accordingly, Appellant respectfully requests reversal of the rejections with respect to Claims 10 and 16 for at least the reasons discussed herein.

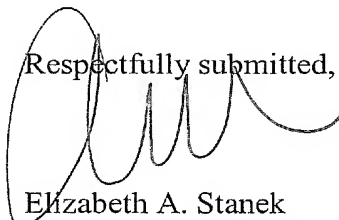
**C. Claims 11 and 17 are Patentable over Griffin, Warnaka and Suzuki**

Claims 11 and 17 stand rejected under 35 U.S.C. §103 as being unpatentable over Griffin and Warnaka in further view of Suzuki (hereinafter "Suzuki"). *See* Final Action, page 5. As discussed above, the dependent claims are patentable at least per the patentability of the independent base claims from which they depend. Accordingly, Appellant respectfully requests reversal of the rejections with respect to Claims 11 and 17 for at least the reasons discussed herein.

**II. Conclusion**

In summary, Appellant respectfully submits that the cited references, alone or in combination, do not teach all of the recitations of the pending claims for at least the reasons discussed herein. Accordingly, Appellant respectfully requests reversal of the rejections of pending claims based on the cited references.

Respectfully submitted,



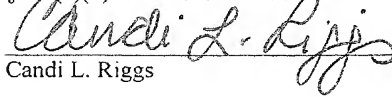
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**CERTIFICATION OF TRANSMISSION**

I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4) to the U.S. Patent and Trademark Office on October 15, 2007.

  
Candi L. Riggs

**APPENDIX A – CLAIMS APPENDIX**

1. (Withdrawn) A portable electronic device, comprising:  
a housing;  
first and second spaced apart transducers positioned in the housing; and  
a multi-mode audio processor circuit configured to transmit sound from the first transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the first and second transducers in a second mode of operation.
2. (Withdrawn) The device of Claim 1 wherein the multi-mode audio processor circuit is configured to generate an audio signal from sound energy received by the second transducer in the first mode of operation.
3. (Withdrawn) The device of Claim 1 wherein the multi-mode audio processor circuit is further configured to combine first and second audio signals produced from sound energy received by the first and second transducers, respectively, in the second mode of operation to generate a noise-attenuated audio signal.
4. (Withdrawn) The device of Claim 1 further comprising:  
an audio amplifier configured to be coupled to the first transducer in the first mode of operation; and  
a preamplifier configured to be coupled to the first transducer in the second mode of operation.
5. (Withdrawn) The device of Claim 4, further comprising a switch coupled to the first transducer and configured to isolate a path of the audio amplifier from a path of the preamplifier during the first and second modes of operation, the switch being configured to be in a first position coupled between the first transducer and the audio amplifier in the first mode of operation and to be in a second position coupled between the first transducer and the preamplifier in the second mode of operation.

6. (Previously Presented) A mobile terminal comprising:  
a housing;  
a microphone positioned in the housing;  
a speaker positioned in the housing remote from the microphone; and  
a multi-mode audio processor circuit configured to apply noise cancellation to first and second microphone inputs thereof, the first microphone input being coupled to the microphone and the second microphone input being coupled to the speaker,

wherein the speaker comprises a transducer and wherein the multi-mode audio processor circuit is configured to transmit sound from the transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the microphone and the transducer in a second mode of operation.

7. (Cancelled).

8. (Previously Presented) The mobile terminal of Claim 6 wherein the multi-mode audio processor circuit is configured to generate an audio signal from sound energy received by the microphone in the first mode of operation.

9. (Previously Presented) The mobile terminal of Claim 6 wherein the multi-mode audio processor circuit is further configured to combine first and second audio signals produced from sound energy received by the microphone and the transducer, respectively, in the second mode to generate a noise-attenuated audio signal.

10. (Previously Presented) The mobile terminal of Claim 6 further comprising:  
an audio amplifier configured to be coupled to the transducer in the first mode of operation; and

a preamplifier configured to be coupled to the transducer in the second mode of operation.

11. (Original) The mobile terminal of Claim 10, further comprising a switch coupled to the first transducer and configured to isolate a path of the audio amplifier from a path of the preamplifier during the first and second modes of operation, the switch being

configured to be in a first position coupled between the first transducer and the audio amplifier in the first mode of operation and to be in a second position coupled between the first transducer and the preamplifier in the second mode of operation.

12. (Original) A mobile terminal comprising a multi-mode audio processor circuit operatively associated with a transducer, the multi-mode audio processor circuit being configured to operate the transducer as a speaker during a first mode of operation and a microphone during a second mode of operation.

13. (Original) The mobile terminal of Claim 12 wherein the transducer comprises a first transducer, the mobile terminal further comprising:  
a housing, the first transducer being positioned in the housing; and  
a second transducer positioned in the housing and spaced apart from the first transducers, wherein the multi-mode audio processor circuit is further configured to transmit sound from the first transducer in a first mode of operation and to generate a composite audio signal from sound energy received by the first and second transducers in a second mode of operation.

14. (Original) The mobile terminal of Claim 13 wherein the multi-mode audio processor circuit is configured to generate an audio signal from sound energy received by the second transducer in the first mode of operation.

15. (Original) The mobile terminal of Claim 13 wherein the multi-mode audio processor circuit is further configured to combine first and second audio signals produced from sound energy received by the first and second transducers, respectively, in the second mode to generate a noise-attenuated audio signal.

16. (Original) The mobile terminal of Claim 13 further comprising:  
an audio amplifier configured to be coupled to the first transducer in the first mode of operation; and  
a preamplifier configured to be coupled to the first transducer in the second mode of operation.

17. (Original) The mobile terminal of Claim 16, further comprising a switch coupled to the first transducer and configured to isolate a path of the audio amplifier from a path of the preamplifier during the first and second modes of operation, the switch being configured to be in a first position coupled between the first transducer and the audio amplifier in the first mode of operation and to be in a second position coupled between the first transducer and the preamplifier in the second mode of operation.

18. (Withdrawn) A method of operating a mobile terminal, comprising:  
transmitting sound from a first transducer in a first mode of operation; and  
generating a composite audio signal from sound energy received by the first transducer and a second transducer in a second mode of operation.

19. (Withdrawn) A method according to Claim 18, further comprising:  
operating the mobile terminal in the first mode of operation when the mobile terminal is idle or receiving a call; and  
operating the mobile terminal in the second mode of operation when the mobile terminal is on a call.

20. (Withdrawn) A method according to Claim 18, further comprising:  
operating the mobile terminal in the first mode of operation when the mobile terminal is idle or receiving a call;  
operating the mobile terminal in the first mode of operation when the mobile terminal is on a call when voice activity has not been detected;  
operating the mobile terminal in the second mode of operation when the mobile terminal is on a call when voice activity has been detected.

21. (Withdrawn) The method of Claim 18 wherein transmitting sound from first transducer is preceded by:



receiving a call request at the mobile terminal from a base station, wherein transmitting sound from a first transducer comprises alerting a user of the mobile terminal of the call request using the first transducer as a speaker in the first mode of operation.

22. (Withdrawn) The method of Claim 21 further comprising:  
determining if the call request has been accepted at the mobile terminal; and  
switching the mobile terminal from the first mode of operation to the second mode of operation if the call has been accepted at the mobile terminal.

23. (Withdrawn) The device of Claim 22 wherein generating a composite signal further comprises:  
combining the first and second audio signals produced from sound energy received by the first and second transducers, respectively, in the second mode of operation; and  
generating a noise-attenuated audio signal based on the combination of the first and second audio signals.

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**APPENDIX B – EVIDENCE APPENDIX**

None.

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**APPENDIX C – RELATED PROCEEDINGS APPENDIX**

None.